

09/936675
531 Rec'd PCT/US
14 SEP 2001
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: Not yet assigned – 371 of PCT/US00/04401

Filing Date: Not yet assigned

Applicant: BARKER

Title: LITHIUM-CONTAINING PHOSPHATE ACTIVE MATERIALS

Attorney Docket: 4858-000080/USB

Commissioner of Patents and Trademarks
Washington, D.C. 20231

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, Applicant hereby submits an Information Disclosure Statement for consideration by the Examiner.

I. LIST OF PATENTS, PUBLICATIONS, AND OTHER INFORMATION

The patents, publications and other information submitted for consideration by the Office (except unpublished U.S. patent applications) are listed on Form 1449 attached hereto.

II. COPIES

A. Submitted herewith is a legible copy of (i) each U.S. patent application publication and U.S. and foreign patent; (ii) each publication or that portion which caused it to be listed; (iii) for each cited pending U.S. application, the application specification including the claims, and any drawing of the application which caused it to be listed including the claims directed to that portion; and (iv) all other information or that portion which caused it to be listed.

B. X Any patents, publications or other information which are listed on Form 1449 or on the copies of PTO-892, but which are not enclosed herewith, were previously cited by or submitted to the PTO in one of the following applications which has been relied upon for an earlier filing date under 35 U.S.C. § 120:

U.S. Serial Number

09/274,371

U.S. Filing Date

23 March 1999

C. This is a PCT application in the entry of the National Phase in the United States. A copy of the International Search Report is attached for the Examiner's information. The documents listed on the International Search Report are listed on the attached Form-1449 for consideration by the Examiner and for listing on any patent resulting from this application. Since the International Search Report was from the US, EPO, or JPO search authorities, copies of these references should have been supplied to the USPTO under the trilateral agreement and are believed to be in the file of the above-identified application. (MPEP 1893.03(g))

III. CONCISE EXPLANATION OF THE RELEVANCE (check at least one box)

A. Except as may be indicated below in (B), all of the patents, publications or other information are in the English language (concise explanation not required).

B. A concise explanation of the relevance of each patent, publication or other information listed that is not in the English language is as follows (see 37 C.F.R. § 1.98(a)(3)):

1. See the attached foreign search report.
2. English translations are provided for:
3. Other:

C. The following additional information is provided for the Examiner's consideration.

IV. CROSS REFERENCE TO RELATED APPLICATION(S)

A. The Examiner is advised that the following co-pending application(s) contain(s) subject matter that may be related to the present application. By bringing this(these) application(s) to the Examiner's attention, Applicant(s) does(do) not waive the confidentiality provisions of 35 U.S.C. § 122.

<u>Serial No.</u>	<u>Filing Date</u>	<u>Art Unit</u>
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V. THIS IDS IS BEING FILED UNDER

A. 37 C.F.R. § 1.97(b): (check only one box)

1. within three months of the filing date of a national application other than a continued prosecution application under § 1.53(d) (37 C.F.R. § 1.97(b)(1)). No fee or certification is required.

2. within three months of the date of entry of the national stage as set forth in §1.491 in an international application (37 C.F.R. § 1.97(b)(2)). No fee or certification is required.

3. before the mailing of a first Office Action on the merits (37 C.F.R. § 1.97(b)(3)). No fee or certification is required. In the event that a first Office Action on the merits has been issued, please consider this IDS under 37 C.F.R. § 1.97(c) and see the certification under 37 C.F.R. § 1.97(e) below; or, if no certification has been made, charge our deposit account a fee in the amount of \$180.00 as required by 37 C.F.R. § 1.17(p).

4. before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No fee or certification is required.

B. 37 C.F.R. § 1.97(c): (check only one box)

• before the mailing date of either any Final Office Action under 37 C.F.R. § 1.113, a Notice of Allowance under 37 C.F.R. § 1.311, or an action that otherwise closes prosecution.

1. No certification; therefore, a fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

2. See the certification below. No fee is required.

C. 37 C.F.R. § 1.97(d):

• after the mailing date of either a Final Office Action under 37 C.F.R. § 1.113 or a Notice of Allowance under 37 C.F.R. § 1.311, yet on or before payment of the issue fee.

1. See the certification below. A fee in the amount of \$180.00 is required by 37 C.F.R. § 1.17(p).

VI. CERTIFICATION UNDER 37 C.F.R. § 1.97(e): (check only one box)

The undersigned hereby certifies that:

A. each item of information contained in this IDS was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(1)); or

B. no item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37

09/936675
531 Rec'd PCT/AU 14 SEP 2001

C.F.R. § 1.56(c) more than three months prior to the filing of this IDS (See 37 C.F.R. § 1.97(e)(2)).

C. Some of the items of information were first cited in a communication from a foreign patent office. As to this information, the undersigned hereby certifies that each item of information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS. As to the remaining information, the undersigned hereby certifies that no item of this remaining information contained in this IDS was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this IDS was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this IDS.

VII. PAYMENT OF FEES (check only one box)

A. A check in the amount of \$180.00 is enclosed for the above-identified fee.

B. Please charge Deposit Account No. 22-0100 in the amount of \$180.00 for the above-indicated fee. A duplicate copy of this paper is attached.

The above references are being cited only in the interest of candor and without any admission that they constitute statutory prior art, contain matter which anticipates the invention, or which would render the same obvious, either singly or in combination, to a person of ordinary skill in the art. Furthermore, this Information Disclosure Statement shall not be construed as a representation that a search has been made.

If it is determined that this IDS has been filed under the wrong rule, the PTO is requested to consider this IDS under the proper rule (with a petition if necessary) and charge the appropriate fee to Deposit Account No. 22-0100.

Please charge any additional fees or credit any overpayment pursuant to 37 C.F.R. § 1.16 or § 1.17 to Deposit Account No. 22-0100.

Respectfully submitted,

Dated: 11 September 2001

By: Linda M. Deschere
Linda M. Deschere
Reg. No. 34,811

HARNESS, DICKEY & PIERCE, P.L.C.
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14 SEP 2001

09/936675

SERIAL NO.

FORM HDP-1449 (Based on Form PTO-1449)

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Sheet 1 of 3

ATTORNEY DOCKET NO.

4858-000080USB

APPLICANT

Barker

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U.S. PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Name	Class/ Subclass	(If appropriate) Filing Date
1.		6,153,333	11/28/2000	Barker		
2.		5,674,645	10/07/1997	Amatucci et al.		
3.		5,514,490	05/07/1996	Chen et al.		
4.		4,985,317	01/15/1991	Adachi et al.		
5.		4,512,905	04/23/1985	Clearfield et al.		
6.		4,049,891	09/20/1977	Hong et al.		
7.		4,009,092	02/22/1977	Taylor		
8.		3,736,184	05/29/1973	Dey et al.		

FOREIGN PATENT DOCUMENTS

Ref. Desig.	Examiner's Initials	Document Number	Date	Country	Class/ Subclass	Translation Yes	No
1.		EP 0 680 106 A1	11/02/1995	EPO		Yes	
2.		JP 61-263069	11/21/1986	JP		Abstract	
3.		WO 98 12761 A	03/26/1998	US		Yes	

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
1.		International Search Report for PCT/US97/15544; EPO - 01/13/1998
2.		Delmas et al., "The Nasicon-type...Materials"; SSI (1988) 28-30 (419-423)
3.		Hagenmuller et al., "Intercalation in 3-D...Features"; Mat. Res. Soc. Proc., SSI, (1991) 323-34

Examiner:

Date Considered:

EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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Sheet 2 of 3

OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)			
Ref. Desig.	Examiner's Initials		
4.		Chem. Abstrs. Svs., (1997); XP 2048304	
5.		Padhi et al., "Lithium Intercalation into Nasicon-type...and $\text{Li}_2\text{FeTi}(\text{PO}_4)_3$ " 37th Power Sources Conference; Cherry Hill, New Jersey; Conference Date: June 17-20, 1996, published Oct. 15, 1996	
6.		J. Gopalakrishnan and K. Kasthuri Rangan, " $\text{V}_2(\text{PO}_4)_3$: A Novel NASICON-Type Vanadium Phosphate Synthesized by Oxidative Deintercalation of Sodium from $\text{Na}_3\text{V}_2(\text{PO}_4)_3$," Chemistry of Materials, Vol. 4, No., 4, 745-747, July/August 1992	
7.		K. Kasthuri Rangan and J. Gopalakrishnan, "New Titanium-Vanadium Phosphates of Nasicon and Langbeinite Structures, and Differences Between the Two Structures Toward Deintercalation of Alkali Metal," Journal of Solid State Chemistry, 109, 116-121, 1994	
8.		Delmas et al., "The Chemical Short Circuit Method...", Mat. Res. Bull., Vol 23, pp. 65-72 (month not available), 1988	
9.		Ivanov-Schitz et al., "Electrical...electrodes"; SSI (Oct 96) 91 (93-99)	
10.		Cretin et al., "Study...Sensors", JR. EP. Ceramic Soc., (1995) (Vol. 15, No. 11) (1149-56)	
11.		Chem. Abstrs. Svs., (1995) XP 2048305	
12.		Patents Abstracts of Japan (1994) Vol. 18, No. 64 (Abstr. for JP 06251764)	
13.		Okada et al., " $\text{Fe}_2(\text{SO}_4)_3$ as a Cathode Material for Rechargeable Lithium Batteries", status as publication to be verified; cited by Examiner in SN 08/717,979	
14.		Adachi et al., "Lithium Ion Conductive Solid Electrolyte", Chemical Abstracts 112 129692 (1981)	
15.		Delmas et al., "A Nasicon-Type Phase as Intercalation Electrode: Sodium Titanium Phosphate ($\text{NaTi}_2(\text{PO}_4)_3$ ", Mater. Res. Bull. (1987)	
16.		Nanjundaswamy et al., "Synthesis, Redox Potential Evaluation and Electrochemical Characteristics of NASICON-Related-3D Framework Compounds", SSI 92 (1996)	
17.		K. Kubo et al., "Synthesis and Electrochemical Properties for LiNiO_2 Substituted by Other Elements", Journal of Power Sources 68 (1997), pp. 553-557	

Examiner:	Date Considered:
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EXAMINER: Please initial if citation considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

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OTHER DOCUMENTS (including Author, Title, Date, Pertinent Pages, etc.)

Ref. Desig.	Examiner's Initials	
18.		"Topics in Phosphate Chemistry", M-T Averbuch-Pouchot, A. Durif, World Scientific Publishing Co., Ptc. Ltd.
19.		Padhi et al., "Phospho-Olivines as Positive-Electrode Materials for Rechargeable Lithium Batteries", J. Electrochem. Soc., Vol. 144, No. 4, April 1997, pp. 1188-1194
20.		Search Report for PCT/US00/04401; US - July 31, 2000

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